

Mass scales

- Electroweak scale

$$G_F^{-1/2} \simeq 250 \text{ GeV}$$

LHC will probe this scale.

- The intermediate scale M_{RR} which enters in Type I See-Saw mechanism to generate tiny masses for **neutrinos**

$$M_{RR} \simeq 10^{12-14} \text{ GeV}$$

- The scale M_G associated with unification of gauge coupling constants (in SUSY), which also enters in **nucleon stability**.

$$M_G \simeq 2 \times 10^{16} \text{ GeV}$$

- The Planck scale M_{Pl} associated with gravity

$$M_{Pl} = (8\pi G_N)^{-1/2} \simeq 2.4 \times 10^{18} \text{ GeV}$$

Thus the study of neutrino masses and nucleon stability is a probe of high scale physics beyond the reach of any current or future accelerator.